NOMINATION—OFFICE OF SCIENCE AND TECHNOLOGY POLICY

HEARING

BEFORE THE

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION UNITED STATES SENATE

NINETY-SEVENTH CONGRESS

SECOND SESSION

ON

NOMINATION OF

RONALD B. FRANKUM, TO BE ASSOCIATE DIRECTOR, OFFICE OF SCIENCE AND TECHNOLOGY POLICY

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NOMINATION—OFFICE OF SCIENCE AND TECHNOLOGY POLICY

THURSDAY, AUGUST 5, 1982

U.S. SENATE,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, D.C.

The committee met, pursuant to notice, at 9:08 a.m., in room 235, Russell Senate Office Building, Hon. Harrison Schmitt presiding.

Staff members assigned to this hearing: Marguerite D. Ayers, professional staff member; and Edward A. Smick, minority professional staff member.

OPENING STATEMENT BY SENATOR SCHMITT

Senator SCHMITT. The hearing will come to order.

I want to wish everyone good morning and apologize for the delay. Western Senators are concerned about water as well as about science and technology policy.

I want to welcome all of you to this hearing where we will take testimony in behalf of Ronald B. Frankum to be Associate Director of the Office of Science and Technology Policy. As Associate Director he will serve, in effect, as the Deputy Director of OSTP. This marks the first time in the 6-year history of OSTP that the President has nominated a candidate for this position which was established by Congress.

Under the Presidential Science and Technology Advisory Organization Act of 1976, OSTP was established to provide within the executive branch advice on the scientific, engineering, and technological aspects of issues that require attention at the highest levels of Government. The Office shall serve as a source of scientific and technological analysis and judgment to the President with respect to major policies, plans, and programs of the Federal Government as a whole.

The Committee on Commerce, Science, and Transportation has jurisdiction for all matters related to science, engineering, and technology research and development policy. The reach of the committee's concerns, therefore, match well with those of the Office of Science and Technology Policy.

In this hearing we will be particularly concerned with the anticipated relationship of the new Associate Director to the Director of OSTP, the overall responsibilities anticipated for this position, and any responsibilities he might have as liaison with Congress.

Mr. Frankum will be introduced first of all by my friend and colleague, Senator Hayakawa. Congressman Clair Burgener, Republi-

can of California also wishes to testify this morning. We are happy to have him here. In addition not only to Bill Lowery, who is a Republican from California we expect to have Duncan Hunter, also a Republican from California.

Duncan, do you want to come up? I am sorry I did not see you.

Mr. HUNTER. I just arrived.

Senator SCHMITT. Senator Hayakawa, would you like to proceed?

STATEMENT OF HON. S. I. HAYAKAWA, U.S. SENATOR FROM CALIFORNIA

Senator HAYAKAWA. Thank you, Mr. Chairman.

I have the pleasure to introduce to your committee Mr. Ronald B. Frankum of San Diego, Calif., President Reagan's nominee for the position of Deputy Director of the Office of Science and Technology Policy.

In general terms, there are two qualifications which a Deputy Director of OSTP should possess—a strong background in science and technology and the ability to work with the President and other administration officials. Mr. Frankum's knowledge and experience more than meet these requirements.

Mr. Frankum's experiences have included several positions with the State of California under then-Governor Ronald Reagan. As special assistant to the Governor from 1967 to 1969, he served as the Governor's science policy adviser. From 1969 to 1971 he instituted the first formal science office for Governor Reagan under a National Science Foundation grant, and acted as a contact point for intergovernmental science and technology.

Subsequently he served as president of the Center for Technical Services, a nonprofit science and education corporation with responsibility for programs in areas including science and technology transfer. More recently, he served as legal adviser to the Southern California Solar Energy Association.

Mr. Frankum's relationship with President Reagan is also well established. Most recently, he served as senior staff attorney for the Reagan-Bush transition team, and from January 1981 to April 1982 he was Deputy Director of the Office of Policy Development at the White House.

Mr. Chairman, as you can see from his background, Mr. Frankum is eminently well qualified for the position of Deputy Director of the Office of Science and Technology Policy. I am happy to introduce him to the committee.

Thank you.

Senator SCHMITT. Thank you, Senator. We appreciate you being with us this morning.

Now, if Congressman Burgener would like to proceed.

STATEMENT OF HON. CLAIR BURGENER, U.S. REPRESENTATIVE FROM CALIFORNIA

Mr. BURGENER. Thank you, Mr. Chairman. It is a privilege to meet with you, with my colleagues, Senator Sam Hayakawa, and Bill Lowery and Duncan Hunter from our House and to appear on behalf of Ron Frankum, who is a close personal friend, a constituent of mine for many years.

He comes from the community of Del Mar, which I have had the privilege of representing for 16 years. He will in January, I predict, become a constituent of Bill Lowery's and I must say he came to San Diego the way many people do—by the U.S. Navy route—after graduation from the University of Texas in 1958. We have known each other for nearly 20 years.

He came to San Diego and did his service duty there. We get many of our best citizens by that route. We are very proud of them and we hope that after his tour of duty is over here, whenever that might be, he will return home because we need him there too.

He studied law at the University of San Diego. He came to Sacramento with the Reagan administration in 1967. It was there that we became best acquainted. He has wide experience in legal and scientific and community nonprofit and governmental organizations. This committee can evaluate his technical preparation and his professional background far better than can I, but what I can say with no reservations, Mr. Chairman, is that Ron Frankum is a man of unquestioned integrity, of high moral purpose, and is a very serious-minded and dedicated person.

If this committee, after careful review, sees fit to confirm him in this high position, it is my confirmed opinion that he will serve with distinction, will reflect only the greatest credit upon our Government and the people it serves.

I thank you, Mr. Chairman, for giving me the opportunity to speak in his behalf briefly.

Senator SCHMITT. Thank you for coming over and visiting us this morning, Congressman. It is great to have you and your testimony has been most helpful.

Congressman Hunter.

STATEMENT OF HON. DUNCAN L. HUNTER, U.S. REPRESENTATIVE FROM CALIFORNIA

Mr. HUNTER. Mr. Chairman, it gives me great pleasure to commend to you Mr. Ronald Frankum for the position of Associate Director of the Office of Science and Technology Policy.

Throughout Ron's career he has excelled at all tasks before him. He is particularly suited to this position through years of research and work in the area of science and technology. Ron has worked closely with all sectors in finding the most efficient ways to apply science and technology to emerging national problems. It is this kind of experience that Ron will bring to the position of Associate Director.

As you know, the Office of Science and Technology Policy is taking on new dimensions. It is currently investigating the utilization of space for domestic and national security purposes and is heavily involved in the development of strategic weapons for our national defense. It is essential, therefore, that the Associate Director work closely with members of the Armed Services Committees and the Science and Technology Committees of both bodies. The lines of communication between this Office and Congress must be opened up, and I sincerely believe Ron is capable of handling this vital task.

Since April, Ron has been serving as Deputy Director of the Office of Science and Technology Policy. During this time I have had the opportunity to work with Ron, and on these occasions I have witnessed firsthand Ron's ability to handle a variety of issues and have been impressed with his work. The position of Associate Director requires an individual who can identify problems and get things done.

Ron Frankum will serve his Office and this Nation well. I recommend him strongly for this position.

I thank you for allowing me to appear this morning and speak in his behalf.

Senator SCHMITT. Thank you, sir. You are more than welcome any time.

Last, but not least, Congressman Lowery.

STATEMENT OF HON. BILL LOWERY, U.S. REPRESENTATIVE FROM CALIFORNIA

Mr. LOWERY. Thank you, Senator. I will be quite brief on behalf of my friend Ron Frankum. I knew him by reputation. I succeeded him as area field director for the Republican Party in California in the San Diego area by about I guess it was not too many years—maybe half a dozen—but knew of his reputation in Sacramento, working with then-Governor Reagan.

Then, when I was elected to the San Diego City Council worked closely with Ron while he was director of the San Diego Urban Observatory—a research management, multidiscipline, multiprogram urban research organization which was very helpful to the city council and city manager. And later, when Ron was president of the Center for Technical Services, again providing counsel to the city council and the city manager in the areas of science technology transfer, transportation studies, solar energy applications, university research.

I remember particularly when several of us were first elected an attempt to cut the city budget by some $25 million. I know around here that is not a lot of money, but in San Diego that was about a 15-percent reduction. Ron was invaluable in the counsel that he provided us as to where to go after those savings and continue to have a good, efficient municipal government.

I could speak because I have seen him up close of his competence, of his dedication, of his ability, and I think he would be a real asset to this Government.

Thank you.

Senator SCHMITT. Thank you, Congressman. We appreciate your testimony as well as that of your colleagues. You certainly are free to leave, if Ron will not take offense. We would love to have you stay and if you wish to join me up here at the dais, we would be more than happy to have you.

Mr. Frankum, if you have a statement, you are certainly free to make it. We can include your prepared statement. It is entirely up to you.

STATEMENT OF RONALD B. FRANKUM

Mr. FRANKUM. Thank you, Senator Schmitt.

It is a privilege to appear before you as President Reagan's nominee for Associate Director of OSTP. It is a great honor to be able to serve my county in this capacity.

Years ago, as was stated earlier, I had an opportunity to help create a science advisor's office in the Governor's office. I have watched with great interest how science and technology have become intertwined in our complex world since those days. For the past 18 months I have had the great honor of working very closely with the current Director of the Office of Science and Technology Policy, Dr. George Keyworth, who acts also, as you know, as the President's Science Adviser.

I would like to offer a few brief observations about the Office itself, its role in the White House and how it has changed, and how I see my role and how I will be able to contribute to the mission.

The Office plays a unique role in this administration in the development of overall national policy. It has been utilized by past Presidents in many different fashions. What is different about this Office in this administration is best exemplified by how the President manages the affairs of state.

As he was as Governor, the President is an excellent manager. He delegates well and utilizes the expertise, knowledge and recommendations of the Cabinet and his staff in an orderly manner. There is a rational decisionmaking process in the White House, and OSTP is part of that process.

We have two main responsibilities: No. 1, scientific and technical advice to the President and other officers within the Executive Office of the President, and No. 2, establishing and insuring the implementation of our science policy. That determines how the immense body, expertise, and facilities supported by Federal funds can be maintained and used to address critical national needs. One is internal; the other external. Some would argue about which is the more important, but in fact they are mutually important and supportive.

The rational decisionmaking process in the White House that I have described requires close working relationships with the National Security Council, the Council of Economic Advisers, the Office of Management and Budget, and other White House staff. It is time consuming, but it produces results.

While this internal activity is difficult to describe, the evidence of the value of the time spent within the black grilled fence that surrounds the White House and Old Executive Office Building is apparent in our science policy.

This administration has a well-defined science policy, one that recognizes that we are at a crossroads for American science. The U.S. leadership in fundamental science is unquestioned but not unchallenged. Maintaining this immense base of creative talent and insuring U.S. preeminence is essential to our future economic welfare and security. The President's policy clearly supports the continued health of science and technology and the need to insure continued supremacy of our high technology industries.

The real meaning of the Reagan science policy, the first substantial change since World War II in the direction and role of Federal R&D, is just now beginning to be understood. The science and engineering communities and American industry are realizing that the

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President's support for science and technology is strong and pragmatic.

OSTP has worked internally within the White House to insure that the strong support for R&D became an integral part of our economic revitalization efforts and that it was reflected in the budget.

The science policy that has evolved can be briefly summarized. The policy clearly distinguishes between the Federal role, as in the support of long-term basic research, and the private sector role, which should be depended upon to support near-term development and commercial demonstration projects.

The policy recognizes the need to exercise discrimination based upon the criteria of excellence and pertinence to national needs, with particular emphasis upon science that supports our industrial base and defense needs.

Lastly, the policy encourages closer cooperation, even partnerships, among industry, academia, and even Federal research centers—letting the needs of the economy play a dominant role in setting priorities.

We are convinced that a closer link between the multiple sectors of our U.S. science and technology enterprise is long overdue and is essential to better posture America to address the competition from abroad that threatens our high technology industries as well as to address other national needs. The position of Associate Director of OSTP is being filled for the first time. It is yet another example of the President's concern for his science policy and his desire to see it carried out.

It will be my responsibility to complement Dr. Keyworth's efforts. As a distinguished scientist in his own right, he has recruited an excellent professional staff of scientists and engineers. It will be my responsibility to use my experience in policy development and knowledge of government to make the Office even more effective.

In this respect I will help coordinate our Office's activities and will continue the internal effort within the Executive Office of the President, working with OMB, the National Security Council, et cetera, to carry out our science policy.

It will also be my responsibility to improve day-to-day working relationships with Congress. The distance that separates the Capitol and the White House can create communications problems, and they are difficult to overcome. But I will address that problem. Finally, I will work with the departments and agencies throughout the Government to help improve research and development activities.

In summary, while the Director, Dr. Keyworth, addresses science and technology, it will be my role to integrate our science policy into the overall national policy development process. It is a challenge that I readily accept.

[The biographical sketch follows:]

BIOGRAPHICAL SKETCH OF RONALD BRUCE FRANKUM

Address: 7326 Yates Court, McLean, Va. 22101.
Date and place of birth: November 17, 1935, Winfield, Kans.
Marital status: Married: Virginia (nmn) Karam.

Names and ages of children: Katherine Jamalle Frankum (17), Ronald Bruce Frankum, Jr. (14).

Education: 1958—University of Texas, B.A.; 1965—University of San Diego School of Law, J.D.

EMPLOYMENT RECORD

April 1982 to present: Office of science and Technology policy, Acting Deputy Director.

January 1981 to April 1982: Office of Policy development, Deputy Director (resigned to join OSTP staff).

November 1980 to January 1981: Office of the President-elect; staff attorney (left to join Office of Policy Development staff).

January 1977 to June 1979: University of San Diego Law School lecturer (part time) (left to join the transition team).

September 1976 to November 1980: Center for Technical Services (Research), president; (left to join the transition team).

January 1973 to November 1980: California State University-SDSU lecturer (part time) (left to join the transition team).

September 1972 to November 1980: Self employment attorney at law, San Diego; (left to join the transition team).

1978 to 1980: Hudson Institute, consultant; (left to join the transition team).

June 1973 to September 1976: San Diego Urban Observatory, (Research), director [1]; (left to join the transition team).

July 1972 to September 1973: Institute for Local Self-Government; (Research); (left to become director of the Urban Observatory).

March 1970 to July 1972: Office of the Lieutenant Governor, California; (left to return to San Diego).

January 1967 to March 1970: Office of the Governor, California; (left to assume position with the Lieutenant Governor).

October 1965 to January 1967: Republican State Central Committee, San Diego; (left to assume position with the Governor).

August 1963 to October 1965: Full Time Student of Law, University of San Diego School of law.

August 1961 to August 1963: Part-time student of law, University of San Diego School of Law.

January 1958 to August 1963: U.S. Navy Reserve (active); (left to attend law school).

September 1957 to January 1958: Ector County Schools, Texas; (left to join the U.S. Navy).

GOVERNMENT EXPERIENCE

In addition to those postions held as listed in Number 7 above: Administrative Conference of the United States (1974-75); California Title I Advisory Committee (1973-74); California Advisory Coordinating Council on Public Personnel Management (1971-73); Chairman, California Voting Machine and Tabulation Commission (1968-70).

MEMBERSHIPS

California Bar Association—1972 to present.

American Bar Association—1972 to present

American Bar Association Sections on Administrative Law and Local Government Law—1972 to present.

San Diego County Bar Association—1978 to 1981.

League of California Cities, Local Government Research Advisory Council—1972 to 1974.

American Society of Public Administration—1972 to present.

Executive Committee, Western Governmental Research Association—1974-75.

Board of Advisors, Southern California Solar Energy Association—1977 to 1980.

Western Governmental Research Association—1973 to 1974.

Board of governors, University of San Diego Law Institute—1976 to present.

Chairman, Board of Trustees, California Innovation Group—1977.

Member, Kiwanis International—1979 to present.

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[1] Title later changed to President, Center for Technical Services.

POLITICAL AFFILIATIONS AND ACTIVITIES

Board of Directors, Republican Associates—1973 to 1975.
California Republican State Central Committee—1973 to 1974.
Executive Committee, Republican Associates—1973 to 1975.
San Diego County Republican Activities—1972 to 1980: (Active in activities providing advice to candidates for State congressional and local offices. All services rendered were volunteer. Financial contributions were all in the $25 to $100 range and limited to $250 per year.)
Federal Government employment—1981 to present; (Employment under the Hatch Act. No direct activity.)

HONORS AND AWARDS

Law Review, University of san Diego School of Law.
Scholar awards for top grades in constitutional law, tax, evidence, personal property, equity, and high grade point average (in sen.or year).

PUBLISHED WRITINGS

As Director of the San Diego Urban Observatory and President of the Center for Technical Services, I either authored, directed research, edited, or published over 75 titles. The Center for Technical Services (1007 Fifth Avenue, San Diego, California) may be able to provide a complete listing.

SPEECHES

1979 to 1980: None.
1981 to present: I have made numerous speeches (more properly described as briefings) within the Executive Office of the President to business, education, and service groups. I do not speak from prepared text and no speech texts were made.

QUALIFICATIONS

Over the past 16 years I have been fortunate in serving my country in a variety of public service assignments including government and education. These include extensive experience in budget, public policy analysis, and teaching in public administration and law.

Senator SCHMITT. Thank you, sir.

Will there be any specific technical areas for which you expect to be responsible?

Mr. FRANKUM. What I anticipate, unless you consider the process of integrating science policy——

Senator SCHMITT. No. I mean a specific science or technology area.

Mr. FRANKUM. I do not anticipate that. There will be occasions, for example in the area of emergency mobilization, where Dr. Keyworth has played a role in the past, or emergency telecommunications. I anticipate a fairly active interest in activity in that area. That is something I did do while I was at the Office of Policy Development, and I anticipate doing some of that in this Office.

Senator SCHMITT. Do you see your position as one involving science policy development, or one of coordinating science policy with other policy decisions within the White House?

Mr. FRANKUM. It is somewhat a combination of both. One of the things that I think I can offer the Office is an ability to coordinate the various sections within the Office and to come up with a more well-defined policy.

I think the greater part of my responsibilities will be in working to insure that science policy fits into the overall policy development activity that goes on within the White House.

Senator SCHMITT. Mr. Frankum, it has been my observation in a fair number of years of observing managers of science at the highest levels of Government, as well as intermediate levels, that in the absence of a science or engineering professional background—education as well as experience—that there is a reluctance for Government officials to reach for solutions for problems that involve science and technology. There just is not any confidence in the sphere of activity in which there is no background or experience.

Why do you consider yourself different? I see the same tendencies in this administration that I saw in the last one and every other one that I have dealt with. There are no people in the highest levels of Government who have the background and experience to give them confidence to reach for solutions to fundamental problems of science and technology.

Why are you different?

Mr. FRANKUM. Well, I think perhaps I have had a unique opportunity as a nonscientist to have been exposed for a long period of time to the area of science policy. I was intimately involved in trying to accomplish the very difficult task of transferring technology to State and local governments. It was something that had a lot of virtue and we are able to accomplish, I think, over a period of several—8 to 10—years several major accomplishments.

I think it is observing this difficulty that makes me realize, and has forced me to become, an avid reader in the area of science and technology. I think at least I view myself as a person who is an expediter. I can assist in solving the problems that have been put forth by the Science Advisor himself, and I can insure that the policy we are working on and that the President has approved can be implemented.

Senator SCHMITT. What do you see as the three or four emerging science policy issues that OSTP and the Congress will have to address in the next, 2 years—the remainder of the first term of the President?

Mr. FRANKUM. You know, one of the interesting things that I noticed when I went to work in this Office several months ago was the wide variety of issues that they were facing and the difficulty of prioritizing those issues—the difficulty of taking a fairly small staff and addressing issues which were complex and which were difficult to solve.

Around the middle part of May, we began a very intensive look at the exact questions that you have raised. Now, rather than a whole series of issues we have been able to place a number of issues under a few basic categories, one of which is the area of industrial competitiveness.

Not only our Office, but the rest of the Nation, too, is now seeing this as an emerging issue, one that will be increasingly discussed in the coming year. We were very fortunate at the conclusion of World War II that this country came out with our industrial base unscathed. Our economy was fairly stable and we were able to contribute to the rest of the world our technologies and our wealth to rebuild countries which were our allies as well as those that we fought against.

We gave a great deal, and I think we can be very proud of the emerging technological bases now appearing in Japan, and Ger-

many, and France, because that, in fact, is a replica or a mirror image of the American model.

Senator SCHMITT. As we slowly sink into the East we can be very proud.

Mr. FRANKUM. Well, let's be pragmatic about this.

Senator SCHMITT. That is what I am trying to get you to do. I want to know what three or four fundamental issues you think are going to be important in the next 2 years.

Mr. FRANKUM. Let me say this: I think the most important thing that our Office will be doing will be in the implementation of the President's science policy, which I described in the opening statement. I think that we are talking here about industrial competitiveness, which is the recognition that our science and technology base is one of the most important things that our country can invest in for the future.

We have some problems today. We have a delivery system within the United States between the research labs—our strong national asset—and the marketplace that needs to be improved. We need to be able to free up private sector initiatives and get the Government out of this system.

And we also have another problem, which perhaps our Office cannot address specifically, in the area of capital formation—the availability of risk capital. These new initiatives that our Office has been working on will be forthcoming. They are the types of initiatives which will address the particular problem of industrial competitiveness, and they are now being circulated within the White House.

Senator SCHMITT. Specifically?

Mr. FRANKUM. As I said, the primary area that our Office will be dealing in is the area of industrial competitiveness. I suppose that you could also highlight the examination of the current state of readiness for our weaponry of the military. I think we can also anticipate that our Office will spend time in the area of examination of advanced weapons.

I believe that we will have a considerable amount of staff attention paid to agricultural research and the current utilization of basic research and existing new technology. I think those would be the ones that we would look at.

Senator SCHMITT. In your testimony, in the middle paragraph, you paint a fairly rosy picture of the administration's science policy. There may be, in some cases, documents to cover the issues I am going to raise, but as I talk with administration officials and as I watch the support or nonsupport for various activities here in the Congress, I get the impression that not only is the science policy possibly not as well defined as you have indicated, but that even if it is, implementation of the policies will be very difficult.

I would list as issues civilian space policy, defense space policy, strategic materials issues, the prevention of disease or its absolute cure, if it occurs, to avoid future health care costs. You just mentioned agriculture. I am afraid that the agricultural research budgets have been going down in the face of everything else holding its own or actually going up somewhat, depending on your definition.

Commercial nuclear policy. Telecommunications policy in the Government is not only disbursed in its development and imple-

mentation but in many areas is a shambles. Transportation—the transportation network of the country is decaying. It is not improving.

And there are major issues in the area you just mentioned, targeted research and technology where we face extreme competition from abroad. In all of these issues—and I am sure there are others—this Senator and, I think, many others, do not see a coherent science policy.

Are we going to be able to develop a science policy? That is a tall order. It is a big list and there are many others, including the ones that you have mentioned.

Mr. FRANKUM. You have asked a very difficult question—that is, whether or not after espousing and establishing what we feel to be a fairly well defined science policy within the White House we will be able to carry that out and to insure its implementation through the budget process and through the daily decisionmaking and the daily crisis management that goes on.

I think we will be able to. There will be times when we will not win on particular program areas and in carrying out and implementing a particular policy that we put forward. But I see in the process that currently exists within the White House a fairly clear implementation mechanism, and I think our Office is so organized and so postured within the White House that we have the capability to carry out that implementation of the science policy.

Senator SCHMITT. I am not sure you do. I hope that you do. The one thing that I find is that there is a reluctance to reach out and obtain assistance in these areas from other sectors outside the administration. It took a long time to finally convince the administration that they ought to have a President's Science Advisory Council or Committee.

There still seems to be a reluctance to work closely with the Congress on the development of legislation that would implement science policy of various kinds. Do you see that changing?

Mr. FRANKUM. Let me take those in reverse order, particularly the White House Science Council and the relationships to the Congress. The White House Science Council has been in existence for just under a year. It is impressive to observe these eminent scientists addressing problems which the President has asked them to look at and see that they spend so much of their own personal time working on the issues that they are asked to address.

The results of that type of activity are just now beginning to emerge, and I think you will see impacts on science policy issues very, very soon.

Now the other part—as far as congressional relations—there is no doubt about it, any office that is at the other end of town has difficulty dealing with Congress. There are many committees. I venture to say I think I counted 26 that our Office had some kind of personal need to interact with.

OSTP is a fairly small Office. However, what I have tried to do is to address that issue. We have had a number of staff meetings to insure that we are able to continue an ongoing relationship with the committees and provide a heads-up use of information that is developed at this end of the street and work much closer together.

I hope that kind of relationship fosters a much better working relationship in the future.

Senator SCHMITT. Well, I hope so too. I must admit to being a little bit discouraged and I hope your presence in the White House will improve the situation.

Do you believe it is the White House's position and the position of at least you and Dr. Keyworth that the military use of space has such a priority that NASA should subsidize its use?

Mr. FRANKUM. That is a double-edged question. It is difficult.

Senator SCHMITT. You bet your life it is a double-edged question.

Mr. FRANKUM. I think we are seeing now evolving in the space policy a recognition that we have a Shuttle that will have multiple uses. In time we are going to have to make sure that we fully utilize that effective space transportation system.

Senator SCHMITT. Does that mean that NASA should subsidize the Department of Defense, or any other agency's use of the Shuttle?

Mr. FRANKUM. I do not think anyone assumes that NASA should subsidize.

Senator SCHMITT. It is all out of the same budget, but NASA does subsidize DOD's operations. The NASA budget is small and it is very difficult to get increases into it. The Defense Department budget is large. It seems to be very easy to get increases into it.

By our calculations, almost 2 billion dollars' worth of NASA funds will be used to underwrite DOD launches over the next several years. Do you think that is appropriate?

Mr. FRANKUM. I think that at least as far as I understand the general problem, that if the problem is one of identifying which budget item the actual costs are associated with, then I think that we would have no objections for that to appear in the DOD budget.

On the other hand, I think if we address the issue as to whether or not sufficient planning went into the development of the NASA budget, the figures that were associated with that bottom line were felt to be, by not only NASA but by the administration when it submitted its budget last year, sufficient to carry out the mission that NASA had laid out before the administration.

Senator SCHMITT. But the existence of an interagency agreement between NASA and the Department of Defense, namely the Department of the Air Force, is such that NASA will subsidize, will underwrite, the cost of DOD launches.

Mr. FRANKUM. I am aware of that.

Senator SCHMITT. And as a consequence there is going to be much less emphasis in NASA on non-Shuttle-related activities—planetary science, the data analysis of past missions, aeronautics, applications such as Earth resources. It is a pretty long list. In fact, it is most of what the Space Act was designed for NASA to do.

Now it has been a pretty lonely place here in the Senate trying to get some budget realism between those two space budgets. Can we expect some support out of OSTP to see that we have budgetary realism in this area?

Mr. FRANKUM. I think that is something that certainly can be explored.

Senator SCHMITT. Well, I have been exploring it now for several months. You are a new man on the block, so you get hit with the questions that I have asked others.

Mr. FRANKUM. You know, that is a budget problem. That is an implementation——

Senator SCHMITT. It is not a budget problem. It is a policy problem. It means that if it continues as it is, it means that NASA will not be doing many of the things that the Congress has previously expected them to do, because the money will not be there.

Mr. FRANKUM. Again, all I can refer to is the budget that was generated in the last year, and again I was observing it from a different angle. It was apparent to me that the total amount of money allocated to the NASA budget was sufficient to meet the mission that they themselves laid out for the aerospace program.

Whether or not the money came through an interagency agreement or not is something which is more, I think, an accounting problem than it is a policy problem.

Senator SCHMITT. Well, if you believe that, then we need to have a lot of conversation. It does not work that way. You know it as well as I do. Even OMB admits it does not work that way. There is going to be a limit on NASA's budget, and if you subsidize to the tune of $200 to $400 million in fiscal 1983 the activities of the Department of Defense, then that is $200 to $400 million of activity that NASA will not undertake in other areas. It is simple.

Mr. FRANKUM. I understand the problem occurs in the budget exercise, but again that is something I certainly would like to take a hold of and try to work on.

Senator SCHMITT. Well, I hope you will because we are fighting it over here and there does not seem to be any interest in the administration to have a strong civilian space agency doing things other than supporting the Defense Department. This reflects, I think, a total lack of understanding of what is happening around this globe of ours, namely that the Soviet Union has a coherent, steady plan to dominate the new ocean of space, both commercially, in their sense of the word and militarily.

The administration, the Congress and the country as a whole has not awakened to that fact of life. The decisions facing this country right now are comparable to the decisions facing the British nation and others in Europe in the 15th century. Are we going to be competitive in the next great new ocean of human endeavor? And the answer so far is no. We are not going to be.

In spite of the spectacular development of the Space Shuttle, there still is no coherent commitment to being competitive commercially. In terms of our national security in space, we have no choice, we have no option. But we have not made a decision one way or the other.

Mr. FRANKUM. I agree.

Senator SCHMITT. I cannot even get in to see the President to talk about this issue.

Mr. FRANKUM. I think the commitment is there to insure we have a continued leadership in space. The decisions as to what in fact we will do are going to be the difficult decisions. That is what we will be seeing in the next year—the definition of the actual programs.

Senator SCHMITT. I would say the difficulty is how you are going to do it, not whether you are going to do it.

Mr. FRANKUM. I think that is what I——

Senator SCHMITT. That is a historical imperative. But you may feel that way and I may feel that way, but I have not noted that the administration feels that way.

In strategic materials, there is a nice long report to the Congress but still no evidence that the administration really believes that there is a crisis in strategic material availability and in the creation of substitutes where availability does not exist.

In health care, preventive medicine and health research, there has been a token increase in the NIH. But speaking from the perspective of an Appropriations Subcommittee chairman, the awareness of the opportunity there to really do something about rising health care costs just has not appeared.

You mentioned agriculture. I hope your statement means that in the next budget and maybe even as amendments to the 1983 budget we are going to see some improvement in agricultural research funding. But we are rapidly running into major, major problems. We are losing our topsoil. Pesticides and herbicides are becoming less effective. They are in conflict with other regulatory activities of the Federal Government.

We have no coherent policy for increasing agricultural trade, nor for the use of agricultural products for energy production. It all seems to be pretty much on the back burner with this administration, as they have been with others.

Nuclear policy. We are the only major country in the world that is not deeply and aggressively involved in uranium science, uranium exploration and in the development of wise use of nuclear power. Again, all we have is a policy statement by this administration and no apparent movement toward doing something about it to correct the mistakes of the past—and there have been plenty—in the design of nuclear powerplants. That has been apparent to many of us for many, many years and unfortunately still nothing has been done.

Telecommunications. All I can do is shake my head. No obvious understanding in the administration as a whole of what the telecommunications revolution means and of the ties of telecommunications, computers and data processing—certainly not in the State Department and it is not clear anywhere else.

Transportation. The Interstate Highway System is decaying. We have done nothing to leapfrog technology in rail and sea transportation which we could do. We have no merchant marine force worth the name.

I hate to paint such a bleak picture, but it is the responsibility of this committee to try to oversee science and technology policy in the Government and looking it over, as we do, it does not look very good. I hope, you consider yourself a breath of fresh air and are going to do something about it. It is certainly a big issue and we are not sure that the OSTP is equipped at this time to do something about it.

Your testimony speaks of the need for closer linkages between or among academia, industry and the Federal Government to help

America deal with foreign competition through our high technology industries.

What specific actions do you see OSTP undertaking to improve those linkages besides the ones you have already described?

Mr. FRANKUM. This is a situation where for many, many years we have had a different course of action. We have had academia operating separate from industry. We have had the Government operating in areas where industry should have operated. I think what we need to do is to look at a new way to accomplish a solution to the problem.

We are currently, encouraging the academic side to work more closely with industry, for industry to support academia in areas of such things as science and engineering education, manpower issues. I think we're establishing and clearly understanding what the Federal role is and what it should be in the area of basic research, allowing and encouraging the private sector to fully utilize the Economic Recovery Tax Act incentives for research and development.

We are going to see a different set of relationships emerge, and our Office will be able to encourage and speak to that particular issue.

Senator SCHMITT. Well, except for what we are ying to do to ourselves now in the tax bill before the Congress, I think there have been some significant changes there. However, it does seem that the administration wishes to move away from linkages that have worked very well in the past, particularly in aeronautics and agriculture.

The models of the NACA and NASA in aeronautics and the Department of Agriculture extension research effort in agriculture are models that I have continually tried to encourage administration after administration to follow. But in the budgetary proposals coming out of OMB there seems to be a tendency to say let industry do it in spite of the success of those programs.

Do you think that this issue will be revisited in the next budget cycle?

Mr. FRANKUM. There are very fine lines that you have to cross or you have to stop at to determine whether or not the Federal Government has a role in the technology side or the R&T side. It has been pointed out to me that whenever the Federal Government, or industry for that matter, approaches research, they attempt to determine whether or not there is going to be an economic benefit to the country.

Once you can establish that there is going to be an economic benefit, the next test, I think, is whether or not a company, a private sector company, has the capacity, the capital, to accomplish the R&D If they cannot, then there is certainly a role for the Federal Government.

The exercise that we went through last year in the aeronautics area is going to be revisited, and I think we will take a much closer look at what the Federal role should be in aeronautics.

On the other hand, on the agricultural side, the things that we are looking at now are perhaps a more discretionary, flexible, and competitive research grant process. And here I would suggest that the potential utilization of our American technology in the area of

recombinant DNA has a tremendous possibility in the area of agriculture. Yet the Department of Agriculture's program has been such that it has been very difficult to bring that kind of technology into the ongoing research activity that they have sponsored.

So for that reason we are looking to suggest more discretionary, more open-type grant programs that will assist and assure that sort of research happens.

Senator SCHMITT. Well, are you telling me that there is going to be less dogmatism from the administration that, if applied research is worth doing, industry will do it?

Mr. FRANKUM. I think that you will see a much more carefully thought-out discussion of that issue in the future.

Senator SCHMITT. Is there a specific plan for looking at specific areas of science and technology and strengthening the linkages that either exist or should exist?

Mr. FRANKUM. Well, you know, the example you raised—I really did not complete my comment—is in the area of aeronautics. After last year's budget exercise in the aeronautics area we recognized that there were some problems generated in the advancement of technology, our Office formed a panel on aeronautics—a very distinguished panel of some 14 or 15 representing both the Government sector and the private sector.

They have reached a point now where within the next 5 to 6 weeks you will see a set of policy recommendations offered. We have seen some drafts, though we have not seen the final work. And I think you will see perhaps a shift, a minor shift, but I think a better recognition of the problem of the Federal role in technology.

Senator SCHMITT. Will this include an analysis of foreign competition in aeronautics?

Mr. FRANKUM. Yes.

Senator SCHMITT. Is the administration concerned that subsidized foreign competition is potentially going to destroy the U.S aircraft market?

Mr. FRANKUM. Rather than getting into the specifics on that one, since that panel study is in a final draft and I would hate to commit the panel and our Office to something which really has not been completed yet, I would hope that I could defer that question until such time as the panel came out with its results.

Senator SCHMITT. What sort of continuing attention do you think the White House and OSTP will give to materials and minerals policy issues in addition to the activities in support of the Committee on Materials—COMAT?

Mr. FRANKUM. This is an area, by the way, that I have myself stepped into in the last several weeks, and so I will have to be quite honest with you that even though I was aware of the national defense stockpile and its relationship in emergency mobilization and its relationship to the problems of emergency industrialization, I had not had an opportunity to look at the organizational problems that our Government faces in the management and continued-resource base that we are trying to establish in the minerals and materials area.

In the last several months, as a result of the reformation of a Committee on Materials, COMAT, out of our Office, I believe we

are beginning now to understand better what the nature of the organizational problem is and also what the current state of the inventory is.

One of the areas which has been suggested and which I think we are quite interested in is a private sector participation in actually assisting the National Government in a formal assay of the stockpile.

We are very interested in the idea.

Senator SCHMITT. Why is there such a reluctance to just let them do it?

Mr. FRANKUM. I think that the only reluctance at this time is the way that the issue was defined to begin with, there is a natural institutional bias in almost every department and in those individuals who have managed inventories like this over many, many years.

That is one of the areas where our Office will take an active part in insuring that the issue is revisited and that we find out if in fact there is any legal reason not to involve the private sector. You know, this was an institutional barrier that was thrown up almost immediately. There was some type of a conflict of interest, and I am going to take it upon myself to determine, utilizing the General Counsels of Commerce and Interior, whether or not there is any legal reason why this cannot occur.

Once I find that out, which should happen in the very near future, then I think we are going to explore that much, much more seriously.

Senator SCHMITT. Is OSTP going to take a look at S. 1982 which I have introduced to provide for independent management except in a national emergency of the stockpile?

Mr. FRANKUM. I will have to admit very honestly that I have not seen that bill.

Senator SCHMITT. We will get it to you.

In trying to deal with the specific issue of the copper stockpile the other day I had to meet with the Director of the Office of Management and Budget, the Secretary of the Treasury, the Secretary of the Interior, representatives of the Department of Defense, myself in a sense representing the Congress, and we still did not have all the players in the room—FEMA, GSA, your Office.

You wonder why we are $14 billion below our goals for the stockpile right now and farther from our goals than we were in 1960?

If the attitude expressed by Mr. Stockman prevails, we are not going to have a domestic mining industry in any basic materials. There is no way that our mining industry can compete with subsidized industries abroad in the current environment and as economic recovery occurs and as our defense demands heat up it is going to be foreign copper and other materials that benefit and the domestic mining industry may well not be able to get started again.

But the administration does not want to take steps to do anything about it. All you hear is why you cannot do something, not what you could do to solve the problem. As you indicated, as soon as you come up with a way to assay the stockpile at no cost to the Government, somebody says, oh, conflict of interest—whatever that is. It is unbelievable.

We understand OSTP has a major effort to examine issues surrounding the most effective and efficient uses of our national laboratories. When will the study be completed?

Mr. FRANKUM. The task was assigned to the White House Science Council about 4 months ago. David Packard, who is a member of the Science Council, was given the chore of chairing that particular panel. I cannot recall, but I can provide, the names of the other members of the panel.

There was a basic assumption that there is a need to examine the role of the Federal labs themselves and their relationships with private sector R&D capacity. I do not think there is any intent or any thinking that we will eliminate a Federal lab. This is a serious examination as to the role of the Federal labs and their missions, and we should have that in the next several months.

Once it is available, I am sure we can——

Senator SCHMITT. Have you considered involving the congressional interests in this exercise?

Mr. FRANKUM. I have, yes. We have talked about it in the last couple of days.

Senator SCHMITT. Yes. That might not be a bad idea.

Mr. FRANKUM. I can assure you it will be done.

Senator SCHMITT. Do you care to speak to the problem of communications and telecommunications policy? Is OSTP going to try to do anything at all to bring it together?

You know, we are totally unprepared except in some technical areas for the ITU Conference that takes place later this year. We did not get an Ambassador appointed until just a few weeks ago. The State Department acts as if telecommunications are not important.

UNISPACE, which is not unrelated, still has no official delegation designated, unless it has happened in the last couple of days.

Mr. FRANKUM. There is a delegation.

Senator SCHMITT. We know that people are going. They may meet once before UNISPACE.

Mr. Frankum, it is just unbelieveable. You are optimistic about science and technology policy, but there certainly is not any in telecommunications. Is the OSTP going to undertake coordination in this area? Do you feel that you even have the charter to do it?

Mr. FRANKUM. Well, we have a charter in the area of emergency telecommunications, in the area of the relationship with the current, existing telecommunications system of the United States in the event of a disaster. We are playing a very heavy role in that.

What that does is give us an exposure to the issues which are currently on the plate of Congress right now. I will admit there is a great deal of confusion as to what we should do in the future about the telecommunications issues. They are both technical issues as well as issues of public policy.

Particularly in those areas of public policy, I would say that our Office will not—and by public policy, I mean more issues of privacy and so forth—be in those areas. However, we participate on a number of senior interagency groups.

Senator SCHMITT. But they are not unrelated, you see. That is the problem. You cannot draw barriers. That is the telecommunications situation that we are in. The barriers have disappeared. The

current law and policy and thought is based on wires and Marconi at the most. But wide-band telecommunications and computers, data processing—it has changed the whole picture.

We are still trying to base policy on the past. You cannot separate them. You just cannot say privacy is unrelated to these other things. It is related to these other things because of technology.

We will have some additional questions for the record. On the bright side, I do want to compliment OSTP for the efforts, seemingly largely successful, although it is still hard to analyze the total budget, in most areas of basic research.

I think, clearly, Dr. Keyworth, with your recent help and the help of his staff and the science community as a whole, has done an outstanding job in reversing the decline of funding for basic research. There are some problems of definition of what is basic research and how you calculate your numbers as you take credit for it. But nevertheless I think there has been a real change.

I have noted that Frank Press, head of the National Academy, and others are giving you credit where credit is due, and I will do so also. But the basic research is still woefully deficient as it applies to space science and to agriculture. It is in the application of basic research to the problems of the Nation, present and future, that I think we have our biggest science policy problem and I wish you well in trying to work through the morass, only part of which I have tried to describe today.

Good luck, Ron.

We will have questions for the record and we hope to get a prompt response to those questions. We will take your nomination up with the chairman of the committee in short order.

Thank you, sir.

Mr. FRANKUM. Thank you, sir.

Senator SCHMITT. The hearing is recessed.

[Whereupon, at 10:08 a.m., the committee adjourned, to reconvene upon the call of the Chair.]

[The following information was subsequently received for the record:]

QUESTIONS OF THE COMMITTEE AND THE ANSWERS THERETO

Question 1. Your testimony spoke of the need for closer linkages among academia, industry and the Federal government. Can you list the OSTP activities and plans for activities specifically targeted to develop closer linkages?

Answer. The scientific and technological advances necessary to attain national aspirations for a revitalized economy, strengthened defense, and improved quality of life for all Americans depend on effective cooperation among government, academia, and industry. For this reason, OSTP is involved in a number of activities intended to strengthen, either directly or indirectly, linkages among these three sectors. These include:

Clearly delineating the appropriate and complementary roles of the public and private sectors in the support and conduct of science and in the development of technology.

Strengthening the federal commitment to the support of basic science and to assuring the health of this country's scientific enterprise.

Clarifying the missions of the national laboratories and their roles in meeting national needs.

Reducing the administrative and paperwork burdens on university scientists and administrators resulting from federally imposed rules, regulations, procedures, and accountability and reporting requirements.

Exploring appropriate ways in which government and industry can cooperate in assuring that national needs for science and technology and for trained scientific and technical manpower are met.

Identifying appropriate and effective means for stimulating increased industrial research and technology development and cooperative industry/university research efforts.

Question 2. OSTP has responsibility for and is active in numerous science policy issues, many of which are also of concern to this Committee. What plans do you have for keeping the Committee informed on these activities as well as on the major efforts you anticipate undertaking over the next two years?

Answer. The Annual Science and Technology Report to the Congress is a formal mechanism by which OSTP keeps Congress informed on our action agenda. In addition, I plan to maintain continuing contact with the Committee's staff, as do our Assistant Directors, on all major issues and initiatives. We also expect that members of the Committee will be in touch with us whenever matters of concern come up.

Question 3. During the hearing you stated that when there is an economic benefit from an R&D activity it is necessary to determine whether the private sector has the capacity to accomplish the R&D. If not, then there is certainly a role for the Federal government. Can you expand on the role and can you give examples of R&D fields where the Federal government should be active?

Answer. The primary nondefense role for the Federal government is to support long-term research that will help to maintain our lead in high technology. This research has long-term economic benefits to the Nation, but those benefits cannot be realized within the normal planning horizon of the private sector. Some examples of fields where the Federal government should be active are: Fundamental materials science, fundamental aerodynamics, fusion energy, fundamental life processes in health and disease.

Question 4. In your testimony, you stated that the primary area your office will be dealing in is industrial competitiveness. Could you describe what specific activities will be undertaken in this area? What generic problems in this area will OSTP examine, or will your activities be limited only to specific industrial fields, e.g., aeronautics, robotics, etc.?

Answer. Because American industrial productivity is so critical to this country's strength and economic vitality, OSTP intends to emphasize policy issues related to strengthening American industry and increasing its industrial competitiveness. These include:

Assuring the health and productivity of the basic science enterprise in this country.

Assuring the availability of adequately trained scientists and engineers to meet national needs.

Clarifying the role of the national laboratories in meeting private sector needs for new knowledge and technologies.

Encouraging legislation to grant the private sector rights to inventions developed under federal funding.

Clarifying anti-trust laws as they restrict or constrain private-sector cooperative R&D.

Providing tax and other incentives designed to stimulate increased private sector research and technology development and commercialization.

Reducing regulatory and other disincentives to increased industrial innovations and productivity.

Question 5. The Office of Science and Technology Policy recently concluded their space policy study for the Administration. What do you see as OSTP's continuing role in space policy? Will OSTP be examining closely the issue of the commercialization of space?

Answer. OSTP has been involved in space policy in two distinct ways. The first, as mentioned, has been in chairing the national space policy review, which recently culminated in the issuance of National Security Decision Directive 42. The second is to provide advice and technical support to the President on matters involving space. This second role will continue and, in fact, increase now that we have a firm Administration policy on space. We take an active role in the development of the space program during the formulation of the President's budget and its subsequent interaction with the authorization and appropriation processes. As to the second part of the question, the commercialization of U.S. remote sensing activities is currently being examined under the auspices of the Cabinet Council on Commerce and Trade; Dr. Keyworht is actively participating in those deliberations. We are also working

with NASA on their efforts in materials processing and are in close contact with a number of groups that are proposing joint and individual ventures in space.

Question 6. Will OSTP be active in developing a coherent comprehensive telecommunications policy for the Federal government? If so, what specific activities will OSTP be undertaking?

Answer. OSTP has essentially confined its telecommunications policy role to the areas of national security, emergency preparedness, and international issues. We have and will continue to participate in the interagency meetings of the Executive Branch in developing telecommunications policy concerning these three important areas. We normally make our contributions to an interagency forum or to a designated lead agency having responsibility for the issue; therefore, we are unable to specify what particular areas we may be undertaking in the future.

Question 7. Do you have any responsibilities for the establishment of communications policy within the Executive Branch?

Answer. OSTP has no statutory or regulatory responsibility for the establishment of communications policy within the Executive Branch.

Question 8. When Deputy Secretary of Commerce, Guy Fiske, appeared before this Committee at his nomination hearing, I submitted a question regarding the Cabinet Council on Commerce and Trade's review of Executive Order 12046, creating NTIA and assigning responsibility for the development of international communications policy. That question has not yet been answered and so far as I know nothing has been done by the Cabinet Council to resolve the problem that there is no focal point for the development of international telecommunications policy. Are you aware of this problem and can you bring about a resolution of this matter?

Answer. I am aware of the circumstances of this issue. I understand that resolution is being sought by an ad hoc group working on the problem at this time. We are optimistic that a solution will be found without having to refer the issue to the Cabinet Council.

Question 9. One of the problems that has encumbered our U.S. delegations at international telecommunications conferences is the lack of expertise within the government. In an effort to remedy this problem, in 1979 I obtained Congressional approval of an exemption for private sector representatives from limitations imposed by conflict-of-interest provisions when these representatives serve on U.S. delegations. This year I amended S.2181, the NTIA authorization bill, with a permanent private sector exemption. That bill passed the Senate on May 19, 1982. Unfortunately, on July 19, 1982, the Chairman of the Committee received a letter from the Department of State opposing that provision, but expressing support for a provision that is in a bill currently in a House/Senate Conference. Do you agree that the private sector should participate in these international telecommunications conferences? Will you work within the Executive Branch to resolve this matter satisfactorily?

Answer. I fully agree with and support participation of the U.S. private sector in international telecommunications conferences and will assist in satisfactorily resolving this matter at the earliest possible time.

Question 10. Recently I recommended to the Senate Foreign Relations Committee that the Senate delay ratification of the final acts agreed to at the 1979 World Administrative Radio Conference, pending the outcome of the I.T.U. Plenipotentiary Conference scheduled this fall. In addition to my substantive concerns about the Treaty, I believe we must indicate to other nations that we are seriously reviewing our options for future participation in I.T.U. and that the U.S. will no longer be satisfied with the status quo. Do you agree that the United States must undertake a thorough review of its basic approach to participation in international telecommunications organizations? Will you initiate, in conjunction with the Departments of State and Commerce, a review of the U.S. position on the WARC Treaty?

Answer. WARC was a technical conference, the basic purpose of which was to review and reallocate the radio spectrum on a worldwide basis. The Executive Branch's views recommending ratification, which I support, are reflected in the Secretary of State's letter forwarding the WARC 79 Final Acts to the Senate. A review of those Acts at this time would be less productive than turning our attention to intense preparations for the series of upcoming specialized radio conferences. I agree that the U.S. should not be satisfied with the status quo if that situation is counter to our interests. In this regard, we should review our positions and approaches to international telecommunications organizations. The Plenipotentiary Conference is one such ideal opportunity. Unlike a technical conference, it will deal with the fundamental areas of the organization, i.e., administration, structure, finances, and the like. It is this type of conference where we can get a much clearer view of whether the organization fulfills our expectations and objectives. The results, in my opinion, of the Plenipotentiary Conference are what we must carefully assess and judge.

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